



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/771,405	02/05/2004	Gerwin Preisinger	024943-057	3822
21839 7590 08/01/2007 BUCHANAN, INGERSOLL & ROONEY PC POST OFFICE BOX 1404 ALEXANDRIA, VA 22313-1404			EXAMINER THOMAS, LUCY M	
			ART UNIT 2836	PAPER NUMBER
			MAIL DATE 08/01/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/771,405	PREISINGER ET AL.	
	Examiner	Art Unit	
	Lucy Thomas	2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 06 April 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-2 are rejected under 35 U.S.C. 103(a) as being unpatentable over Susumu et al. (JP 10 014159) in view of Op Het Veld et al. (US 6,127,778). Regarding Claim 1, Susumu et al. discloses a device (see Abstract and drawings 1-5) for protecting 4 a bearing of an electrical machine against damaging passage of current, wherein the electrical machine comprises a stator 5 and a rotor 2 pivotally mounted relative to the stator by the bearing, the device comprising a compensation circuit (see 12, 10 in Figure 3) for eliminating or removing a parasitic current arising during operation of the electrical machine and passing through the bearing; and a coupling element (see 13 in Figure 3) for direct or indirect coupling (of the parasitic current to ground).

Susumu's device differs as the compensation circuit does not produce a compensation current having a corresponding magnitude as the parasitic current but opposite in phase to the parasitic current, and the coupling element is for coupling the parasitic current to ground not for coupling a compensation current into the bearing. Op Het Veld teaches a compensation circuit (compensation conductor) which produces a compensation current having corresponding magnitude as a parasitic current but

Art Unit: 2836

opposite in phase to the parasitic current and coupling circuit (capacitance between ground and the compensation conductor) for coupling the compensation current (see Column 1, lines 42-64). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device of Susumu and to provide a compensation current and means to couple the compensation current into the bearing, because Op Het Veld teaches that parasitic current can be compensated by a compensation current of same magnitude and opposite phase.

Regarding Claim 2, Susumu et al. discloses the compensation circuit, which comprises a point at which phase voltages for operation of the electrical machine are found (see figure 3). The recitation of star point is to indicate a point at which the sum of phase currents is zero and sum of phase voltages is zero, and the recitation of artificial is to indicate that the phase-to-neutral values are artificial, in a 3-wire wye configured system.

3. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Susumu et al. (JP 10 014159) in view of Op Het Veld et al. (US 6,127,778) and Desai et al. (US 6, 449, 567). Regarding Claim 3, Susumu does not disclose three identical impedances, which forms the artificial star point. Desai et al. discloses three impedances  $Z_a$ ,  $Z_b$ , and  $Z_c$ , which form the artificial star point 51 (Figure 2). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include the identical impedances, which necessarily is part of generating an artificial star point in three phase systems, as shown in the drawings to simplify and facilitate

Art Unit: 2836

connection of a conventional three phase protection circuit to the device taught by Susumu.

3. Claims 4-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Susumu et al. (JP 10 014159) in view of Op Het Veld et al. (US 6,127,778), Desai et al. (US 6, 449, 567) and Baumgartl et al. (US 5,859,529). Regarding Claim 4, Susumu, Op Het Veld, or Desai disclose the device, wherein the compensation circuit also comprises a polarity reversal transformer having a primary side to which the star point voltage is supplied at least in part and a secondary side which produces a voltage opposite in phase to the star point voltage. Baumgartl discloses a voltage transformer T1, having a primary side to which star point voltage is supplied at least in part and a secondary side which produces a voltage opposite in phase to the star point voltage (Figure, Column 1, lines 50-65, Column 2, lines 18-32). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the combination of Susumu, Op Het Veld, and Desai and to provide a transformer to obtain a voltage of opposite phase as taught by Baumgartl, because voltage transformers are particularly useful in cases where inductive voltages cannot be used because of the transformers' size and price.

Regarding Claim 5, Baumgartl discloses an amplitude matching stage connected between the artificial star point and the polarity reversal transformer T1, the amplitude matching stage applying adjustable fraction of the star point voltage to the polarity reversal transformer (Figure, Column 1, lines 50-65, Column 2, lines 18-32). Claim 6 only recites conventional functional feature of a transformer, having several winding taps to provide various levels of output voltages on the secondary stage.

Regarding Claim 7, Susumu discloses a frequency response matching stage (see 14 of 12a in Drawing 4 and [0017]). In the above-mentioned combination, the polarity reversal transformer would be connected on the secondary side to an input of the frequency matching stage, which equalizes a frequency response of the compensation current to the parasitic current.

Regarding Claim 8, Susumu discloses a device, wherein an output of the frequency matching stage is connected to the coupling element 13. Regarding Claims 9-10, Op Het Veld discloses the coupling element which is a capacitor, and the coupling element would necessarily be configured to be arranged in the device of Susumu, such that the coupling compensation current takes place into the rotor shaft of the rotor by which the rotor in the bearing is pivotally mounted.

4. Claims 11-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Susumu et al. (JP 10 014159) in view of Op Het Veld et al. (US 6,127,778) and Baumgartl et al. (US 5,859,529). Claims 11-17 recite the elements of Claims 4-10, except for dependence on Claim 2. Regarding Claim 11, Susumu does not disclose the device, wherein the compensation circuit also comprises a polarity reversal transformer having a primary side to which the star point voltage is supplied at least in part and a secondary side which produces a voltage opposite in phase to the star point voltage. Baumgartl discloses a voltage transformer T1, having a primary side to which star point voltage is supplied at least in part and a secondary side which produces a voltage opposite in phase to the star point voltage (Figure, Column 1, lines 50-65, Column 2, lines 18-32). It would have been obvious to those skilled in the art at the time the

Art Unit: 2836

invention was made to modify the combination of Susumu and Op Het Veld, and to provide a transformer to obtain a voltage of opposite phase as taught by Baumgartl, because voltage transformers are particularly useful in cases where inductive voltages cannot be used because of the transformers' size and price.

Regarding Claim 12, Baumgartl discloses an amplitude matching stage connected between the artificial star point and the polarity reversal transformer T1, the amplitude matching stage applying adjustable fraction of the star point voltage to the polarity reversal transformer (Figure, Column 1, lines 50-65, Column 2, lines 18-32). Claim 13 only recites conventional functional feature of a transformer, having several winding taps to provide various levels of output voltages on the secondary stage.

Regarding Claim 14, Susumu discloses a frequency response matching stage (see 14 of 12a in Drawing 4 and [0017]). In the above-mentioned combination, the polarity reversal transformer would be on the secondary side to an input of the frequency matching stage, which equalizes a frequency response of the compensation current to the parasitic current. Regarding Claim 15, Susumu discloses a device, wherein an output of the frequency matching stage is connected to the coupling element 13. Regarding Claims 16-17, Op Het Veld discloses the coupling element which is a capacitor, and the coupling element would necessarily be configured to be arranged in the device of Susumu, such that the coupling compensation current takes place into the rotor shaft of the rotor by which the rotor in the bearing is pivotally mounted.

Claims 18-22 basically recites the elements of Claims 1-2 and 4-5, except the recitation of compensation circuit (Claim 1) versus means for producing a compensation

Art Unit: 2836

current (Claim 18), and recitation of means for producing compensating current of opposite phase (Claim 18).

***Response to Arguments***

5. Applicant's arguments filed 4/25/2007 have been fully considered but are moot in view of new grounds of rejection.

***Conclusion***


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lucy Thomas whose telephone number is 571-272-6002. The examiner can normally be reached on Monday - Friday 8:00 AM - 4:30 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on 571-272-2084. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2836

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

LT  
July 23, 2007

  
7/25/07

MICHAEL SHERRY  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800